AN UNNAMED SPECIES OF *RANULARIA* (GASTROPODA : CYMATIIDAE) FROM AUSTRALIA

HAL LEWIS

The Academy of Natural Sciences, Philadelphia

ALAN BEU

New Zealand Geological Survey, DSIR, Lower Hutt, New Zealand

SUMMARY

Three specimens from Queensland and five from northern Western Australia belong in the same species as the two paralectotypes of *Triton pyriformis* A. Adams, 1854, a species that has not been recognised since it was named. However the lectotype of *Triton pyriformis* is a specimen of *Ranularia encaustica* (Reeve, 1844), and the name is preoccupied by *Triton pyriformis* Conrad, 1849 (= *Gutturnium muricinum* Röding, 1798), and so the species is redescribed as *Ranularia oblita* n. sp.

INTRODUCTION

Three specimens of an unknown *Ranularia* were collected on the beach at Point Cartwright, Mooloolaba, Queensland, by Mr. R. Evans during the spring of 1975 and were sent to T. A. Garrard of the Australian Museum. They were, in turn, sent to the authors for examination and identification. While a manuscript was in preparation, two of five further specimens of the same species collected by SCUBA diving off Vlaming Head lighthouse bay, North-West Cape, northern Western Australia, by Mr. and Mrs. M. C. East during 1975, were submitted to us for identification by Mrs. S. Slack-Smith, of the Western Australian Museum, and by Mrs. East. The eight Australian specimens belong in the same species as the two paralectotypes of *Triton pyriformis* A. Adams (1854: 312) examined in the British Museum (Natural History) by one of us (Lewis), although they do not agree with the lectotype. The specimens are named as a new species.

TAXONOMY

Family CYMATIIDAE Iredale, 1913

Genus *Ranularia* Schumacher, 1817

1817 *Ranularia* **Schumacher,** *Essai d'un nouveau système des habitations des vers testacés:* **253-4. Type species (by subsequent designation, Clench and Turner, 1957):** *Ranularia longirostra* **Schumacher, 1817 (=** *Cymatium gutturnium* **Röding, 1798), Recent, West Pacific.**

1817 *Ranula* **Schumacher,** *Essai d'un nouveau système des habitations des vers testacés:* **77** *(nomen nudum).*

1904 *Tritonocauda* **Dall,** *Smithsonian Misc. Collns,* **47: 133. Type species (by original designation):** *Murex caudatus* **Gmelin, 1791, Recent, West Pacific.**

Most modern workers have considered the type species of *Ranularia* to have been validly designated by Herrmannsen (1847: 388) who, however, cited only the non-binominal name *Tritonium* *clavator* Chemnitz, which is not available and cannot be designated as type species although it was listed as a synonym of his species by Schumacher (1817: 254). The first workers to validly designate a type species for *Ranularia* seem to have been Clench and Turner (1957: 204) who listed *Ranularia longirostra* Schumacher, 1817 as a synonym of the species they cited as type, and thereby designated the originally included name as type species of *Ranularia* Schumacher (*International Code of Zoological Nomenclature*, Article 69(a) iv).

Ranularia encaustica (Reeve, 1844)

Fig. 1-2.

1844 *Triton encausticus* Reeve, *Conch. Icon.*, 2: *Triton*, pl. 12, fig. 43. (April).
1844 *Triton encausticus*: Reeve, *Proc. Zool. Soc. Lond.* 12: 115. (Dec.).
1854 *Triton pyriformis* A. Adams, *Proc. Zool. Soc. Lond.* 22: 312 (in part) (not *Triton pyriformis* Conrad, 1849, = *Gutturnium muricinum* Röding, 1798).
1942 *Triton pyriformis*: Yen, *Proc. Malac. Soc. Lond.* 24: 215, pl. 18, fig. 111 (Lectotype).

The syntypes of *Triton pyriformis* A. Adams, in the British Museum (Natural History) (reg. no. 1967683), include two specimens conforming to A. Adams' description. A. Adams (1854: 312) stated that "This species is pyriform, with a double row of compressed tubercles in the middle of each whorl. There are no regular varices and the canal is recurved". His Latin description also states clearly ". . ., labio transversim corrugato . . .". The syntypes include also a third shell, a specimen of *Ranularia encaustica* (Reeve) (Fig. 1,2) differing from Adams' description in having five rows of small tubercles, several varices, a smooth inner lip, and an almost straight canal, and differing markedly in colour from all specimens agreeing with A. Adams' description. Unfortunately the specimen of *R. encaustica* (Reeve) was designated and figured by Yen (1942: 215, pl. 18, fig. 111) as the lectotype of *Triton pyriformis* A. Adams. Also, A. Adams's name *Triton pyriformis* is preoccupied by *Triton pyriformis* Conrad (1849: 211). Conrad cited the figure in Martini's *Conchylien Cabinet*, Vol. 3, pl. 112, fig. 1050 & 1051, cited also as figures of *Gutturnium muricinum* (Röding) by Röding (1798: 133).

The eight specimens from Australia described below as *Ranularia oblita* n. sp. agree in all details with the paralectotypes of *Triton pyriformis* A. Adams, and conform to Arthur Adams's description. They represent the first specimens of this "lost" species recognised since it was named in 1854. However, as the lectotype of *Triton pyriformis* is a specimen of *Ranularia encaustica* (Reeve, 1844) and there is no evidence to suggest that the lectotype was not one of Arthur Adams's syntypes (he did not cite dimensions or state the number of specimens before him), and as A. Adams's name is preoccupied, we describe as a new species what we believe to be the species Arthur Adams was attempting to name.

Ranularia oblita n. sp.

Fig. 3-14

1854 *Triton pyriformis* A. Adams. *Proc. Zool. Soc. Lond.* 22: 312 (in part) (not *Triton pyriformis* Conrad, 1849).

Shell small, with short spire, long, strongly dorsally directed siphonal canal, and only the terminal varix developed. Whorls well rounded, with wide, gently sloping, strongly concave shoulders, a rounded periphery, and base tapering gradually to a narrow siphonal canal. Sculpture of low, wide, rounded spiral cords, five or six on spire whorls and about 20 on last whorl and canal, with interspaces filled by low secondary and tertiary spiral cords of about the same width as the primary cords; crossed by short, narrowly rounded axial folds extending over the peripheral area only, forming two rows and on many specimens a weak third row of small, narrowly rounded, compressed nodules where they are crossed by the major spiral cords; 9 or 10 axial folds on last whorl. Varix wide and low, with a low, square-edged abapertural margin, and with adapertural edge margined by smooth, polished, narrowly reflected edge of outer apertural lip; varix ascends penultimate whorl to height

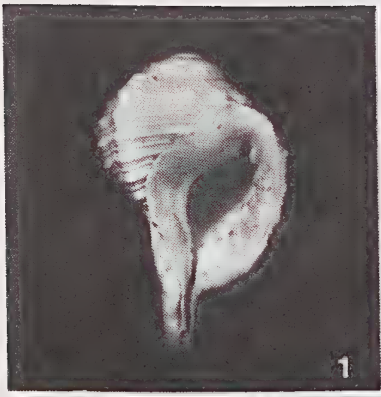
---

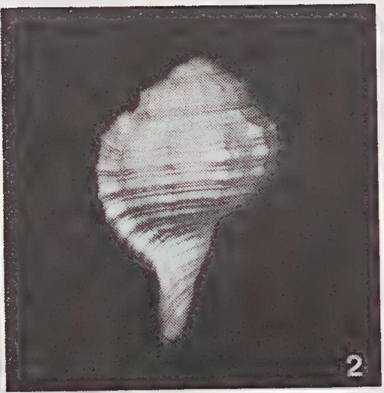
FIGURES 1-8.

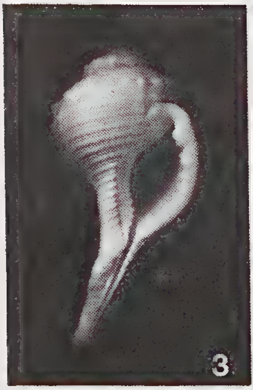
1-2. *Ranularia encaustica* (Reeve), lectotype of *Triton pyriformis* A. Adams, 1854; British Museum (Natural History), 1967683; 61.5 x 38.5 mm.

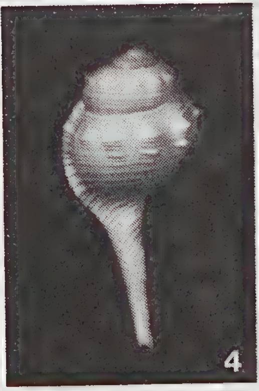
Ranularia oblita n. sp., paratypes.

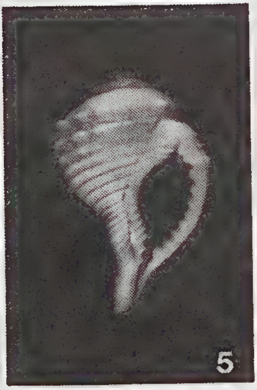
3-4. paralectotype of *Triton pyriformis* A. Adams, in BM (NH) lot 1967683, "China"; 58 x 28 mm.
5. paralectotype of *Triton pyriformis* A. Adams, 1854, in BM (NH) lot 1967683; 47 x 30 mm.
6-8. paratypes, Pt. Cartwright, Mooloolaba, southern Queensland (anterior canals broken); 6.-43 x 24 mm; 7.-31 x 22 mm; 8.-33 x 22 mm.

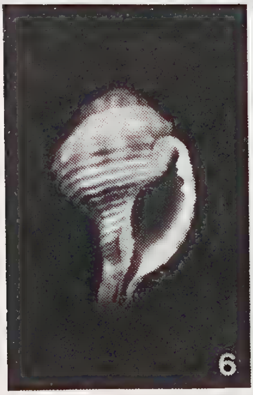

1

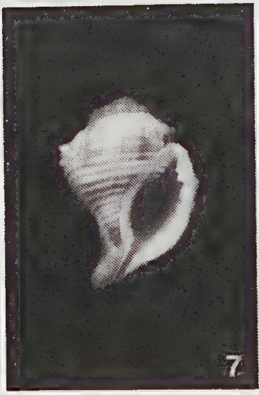

2

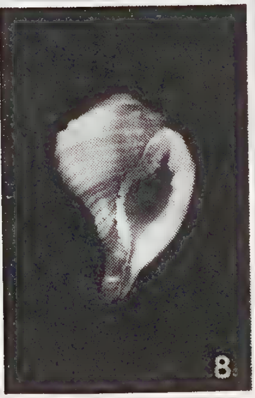

3


4


5


6


7


8

of lower row of peripheral nodules to enclose a narrow, strongly calloused, posterior anal canal. Aperture narrowly oval, extended posteriorly and anteriorly into narrow siphonal and anal canals. Outer lip moderately thick, rounded, smooth and polished, interior bearing 9 or 10 narrow, well raised ridges that extend only a short distance into the aperture, uppermost bifurcate and margining anal canal. Inner lip strongly calloused at anal canal, thin on parietal area so that spiral cords of previous whorl show through, and moderately thickened on columella so that columellar edge ceases abruptly at a smooth, narrowly rounded ridge separated from previous whorl by a shallow groove; sculptured with about 15 low, narrow, weakly anastomosing plicae, more prominent at top of parietal area and towards base of columella than in centre of lip. A very small, narrow umbilical chink at top of siphonal canal is partly covered by thin, narrowly reflected inner lip of canal in most specimens. Protoconch missing from all available specimens. Aperture white; exterior light to medium reddish brown, mottled with white on left side of last whorl; varix white, with large, dark reddish brown patches at lower peripheral spiral cord and near base of lip.

Dimensions: height 37.0 mm, diameter 23.3 mm (holotype); height 36.3 mm, diameter 20.7 mm (paratype, WM 11895); height 43 mm, diameter 24 mm; height 31 mm, diameter 22 mm; height 33 mm, diameter 22 mm (three Mooloolaba paratypes); height 58 mm, diameter 28 mm; height 47 mm, diameter 30 mm (paralectotypes of *Triton pyriformis* A. Adams).

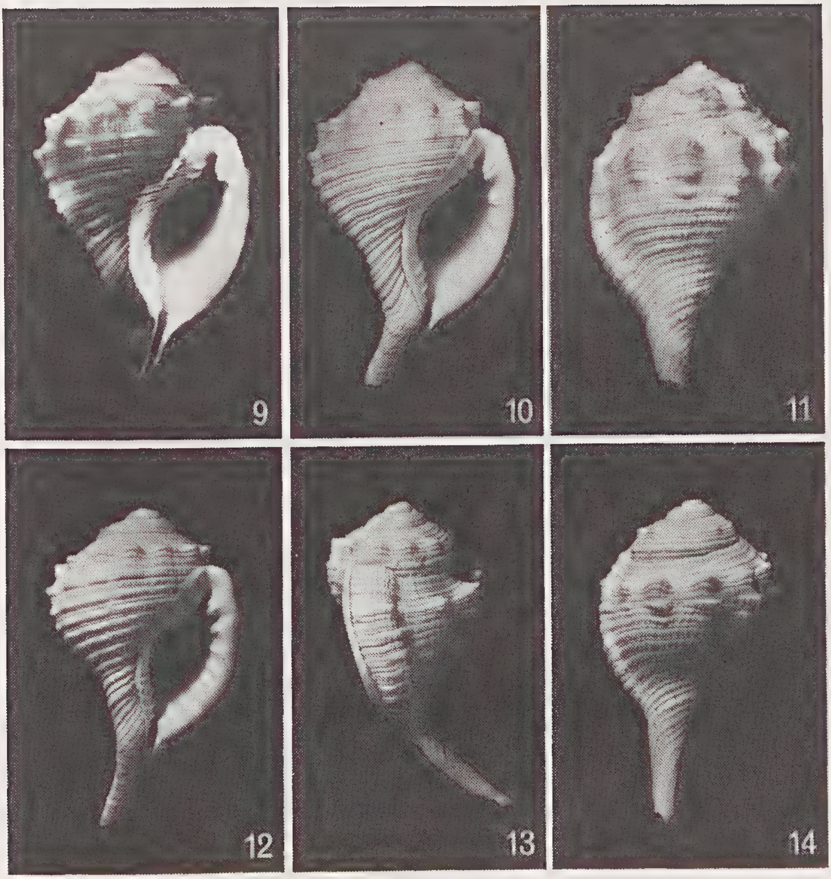
Localities: collected empty by SCUBA diving in 15-18 m, 2 km off Vlaming Head lighthouse bay, North-West Cape, Western Australia, 21° 47'30"S 114° 7'30"E Mr. & Mrs. M. C. East, 1975, holotype (WAM 1188-76), one paratype (WM 11895), and three specimens in private collections; cast on beach, Point Cartwright, Mooloolaba, southern Queensland, Mr. R. Evans, 1975, three paratypes (ANSP 340903, C103434, and colln. R. Evans, Mooloolaba); "China", H. Cuming colln., British Museum (Natural History), two paratypes (paralectotypes of *Triton pyriformis* A. Adams).

Material: Holotype (WAM 1188-76) presented to Western Australian Museum, Perth, by Mrs. G. Hansen; one paratype (WM 11895) in New Zealand Geological Survey; one paratype (C103434) in Australian Museum, Sydney; one paratype (ANSP 340903) in Academy of Natural Sciences, Philadelphia; two paratypes (1967683; paralectotypes of *Triton pyriformis* A. Adams) in British Museum (Natural History); one paratype in collection R. Evans, Mooloolaba.

Discussion: Ranularia oblita is a distinctive species, recognisable by its small size, by its short spire and long, strongly dorsally directed siphonal canal, by its tan colouration with two large white and two smaller dark brown blotches on the terminal varix, by having only the terminal varix developed, by its thickened, white outer lip bearing well-raised internal denticles, by its thin, white inner lip bearing well-marked, widely spaced ridges over its full height, and by its sculpture of rounded spiral cords that are raised into two peripheral rows of small, narrowly rounded nodules where they cross the short axial folds. The aperture differs conspicuously from that of *R. encaustica* (Reeve) in being white rather than flesh pink, in having a narrower outer lip bearing more prominent internal denticles, and in having a lirate, thin inner lip rather than the broad, smooth, thick, highly polished inner lip of *R. encaustica.* The exterior colour is markedly darker and the siphonal canal is much more strongly inclined towards the dorsum in *R. oblita* than in *R. encaustica.* The aperture is most like that of *R. exilis* (Reeve) but that species has numerous prominent varices, paler colour with a distinctive chestnut pattern, a markedly taller spire, and more prominent exterior sculpture. The type species, *R. gutturnia* (Röding), differs from *R. oblita* in its slightly taller spire, paler colour with chestnut axial lines, more prominent sculpture, more numerous varices, and brilliant orange-chestnut aperture with a thickened, smooth inner lip.

Ecology: Mrs. A. East reported (*in litt.* to A.G.B., 18 Feb. 1976) that five empty shells of *Ranularia oblita* were collected by her and Mr. East when SCUBA diving 2 km out to sea off Vlaming Head lighthouse bay, North-West Cape, northern Western Australia. She reported that "the area is flat, sandy, weed covered rock and limestone bottom with occasional corals, soft corals, sponges, gorgonians and whips, etc.," 15-18 m deep. "It's often murky water as there is a big tidal movement in that area". The habitat of submerged off-shore rock reefs probably explains why *R. oblita* has not been collected more frequently.

Distribution: The paratypes of *Ranularia oblita* from the collection of Hugh Cuming are labelled "China". As many workers, including Yen (1942, p. 171) have noted, the terms "China" and "China Seas" were used as catch-all localities by some early uncritical collectors for much of south-east Asia or even much of the Pacific, and Hugh Cuming is well known to have been a collector whose localities were often suspect. The fact that *Ranularia oblita* has not been recollected as far north as China or



FIGURES 9-14.
Ranularia oblita n. sp., 2 km off Vlaming Head lighthouse bay, North-West Cape, Western Australia, 15-18 m (enlarged x 1.5).
9. Holotype, WAM 1188-76, 37.0 x 23.3 mm, natural colour;
10-11. Same specimen whitened with ammonium chloride sublimate to show sculpture.
12-14. Paratype, WM 11895, N.Z. Geological Survey, 34.2 x 20.7 mm, whitened with ammonium chloride.

Japan, to our knowledge, suggests that the paralectotypes of *Triton pyriformis* really came from further south in the western Pacific. However, such speculation can never be resolved and it is possible that the species ranges sparsely throughout the western Pacific from about Hong Kong to Australia, as do some related species such as *Ranularia sinensis* (Reeve).

In Australia, *Ranularia oblita* has been collected from two widely separated localities in northern Western Australia and southern Queensland, and presumably occurs sporadically around the northern coast between these extremes.

We have studied Cymatiidae extensively in many of the major collections throughout the world without recording any specimens of *Ranularia oblita* other than the specimens in the British Museum

(Natural History). Its rarity, the confusion caused by the illustration of *R. encaustica* as the lectotype of *Triton pyriformis,* its off-shore rocky habitat, and the absence of any illustrations of true *R. oblita* have contributed to its being a "lost" species.

ACKNOWLEDGEMENTS

We wish to thank Mr. Ron Evans for the loan of the three Mooloolaba specimens, and for presenting one to the Academy of Natural Sciences and one to the Australian Museum; Mrs. Shirley Slack-Smith of the Western Australian Museum for the loan of the North-West Cape specimen and Mrs. G. Hansen, Perth, for donating it to the museum; Mrs. A. East for presenting a specimen to the New Zealand Geological Survey; T. A. Garrard for bringing the Mooloolaba specimens to our attention; Dr. George Davis, Academy of Natural Sciences, Philadelphia, for discussion on the manuscript; the British Museum (Natural History) for allowing one of us (Lewis) to examine and photograph the type specimens of Cymatiidae, and especially Miss A. Blake of the Mollusca Section for the photograph of the paralectotype; and Dr. R. K. Dell, Director, N.Z. National Museum, and Dr. P. A. Maxwell, N.Z. Geological Survey, for comments on the manuscript. Photographs 9-14 are by D. L. Homer, N.Z. Geological Survey.

REFERENCES

ADAMS, A. 1854. Descriptions of twenty-seven new species of shells from the collection of Hugh Cuming, Esq. *Proceedings of the Zoological Society, London,* 22: 311-7.

CLENCH, W. J. and TURNER, R. D. 1957. The family Cymatiidae in the Western Atlantic. *Johnsonia,* 3(36): 189-244, pl. 110-135.

CONRAD, T. A. 1849. Notes on shells, with descriptions of new genera and species. *Journal of the Academy of Natural Sciences, Philadelphia, new ser.,* 1: 210-214.

HERRMANNSEN, A. N. 1847-49. *Indicis generum malocozoorum primordia. Nomina subgenerum, generum, . . .* Vol. 2. Casellis. p. 717 [dates of publication : Supplement, Epilogus, p. iv].

RÖDING, P. F. 1798. *Museum Boltenianum, sive catalogus cimeliorum e tribus regnis naturae . . .* (2). Hamburg. 199 pp.

SCHUMACHER, C. F. 1817: *Essai d'un nouveau Systeme des habitations des vers testacés.* Copenhagen. 287 pp., 22 pl.

YEN, TENG-CHIEN, 1942. A review of Chinese gastropods in the British Museum. *Proceedings of the Malacological Society, London,* 24: 170-289, pl. 11-28.